

Figure 1A

Sequence comparison in the region of the ligand binding domain of nicotinic acetylcholine receptor α subunits

Accession Numbers of α subunits used:

>gi 871037 : a4_chick
>gi|213218 : a1_Torpedo
>S77094 : a1_Human
>P17644 : a2_Drosophila
>CAA75688 : a3_Drosophila
>CAA04056 : a1_Heliothis
>AAD09808 : a2_Heliothis
>AAD09809 : a3_Heliothis
>CAA57477 : a2_Myzus
>AJ236786 : a3_Myzus

Parameters of ClustalX 1.81(Thompson et al. 1997, IGBMC, Strasbourg, France)

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-novgap \
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-gapdist=4 \

a3_Heliothis	YDDL	LSNYNR	LIRP	VTNVSD	ILTV	RLGLKL	SQLM	EVNLKN	QVMT	TNLWVE
a2_Myzus	YDDL	LSNYNR	LIRP	VGNNSD	RLTV	KMGLKL	SQIE	EVNLRN	QIMT	TNVWVE
a2_Drosophila	YDDL	LSNYNR	LIRP	VSNNTD	TVLV	KLGLRL	SQLI	DLNLKD	QILT	TNVWLE
a1_Manduca	YDDL	LSNYNK	LVRP	VNLVSD	ALT	VRIKLL	SQLI	DVNLKN	QIMT	TNLWVE
a1_Heliothis	YDDL	LSNYNK	LVRP	VNLVSD	ALT	VRIKLL	SQLI	DVNLKN	QIMT	TNLWVE
a3_Drosophila	YDDL	LSNYNK	LVRP	VNVSTD	ALT	VRIKLL	SQLI	DVNLKN	QIMT	TNLWVE
a3_Myzus	YDDL	LSNYNK	LVRP	VNLNTD	PLP	VRIKLL	SQLI	DINLKN	QIMT	TNLWVE
a1_Torpedo	VANL	LENYNK	VIRP	VEHHTH	FVDI	TVGLQL	IQLI	SVDEVN	QIVET	NVRLR
a1_Human	VAKL	FKDYSS	VVRP	VEDHRQ	VVEV	TVGLQL	IQLI	NVDEVN	QIVT	TNVRLK

a3_Heliothis	Q.....	.....	.....	KWFD	YKLQWNPDDY	GGVEMLYVPS
a2_Myzus	Q.....	.....	.....	EWND	YKLKWNPEDY	GGVDTLHVPS
a2_Drosophila	H.....	.....	.....	EWQD	HKFKWDPSEY	GGVTELYVPS
a1_Manduca	Q.....	.....	.....	SWYD	YKLSWEPREY	GGVEMLHVPS
a1_Heliothis	Q.....	.....	.....	SWYD	YKLSWEPREY	GGVEMLHVPS
a3_Drosophila	Q.....	.....	.....	SWYD	YKLKWEPEY	GGVEMLHVPS
a3_Myzus	Q.....	.....	.....	YWYD	YKLTWNPDEY	GGVEGLHVPS
a1_Torpedo	Q.....	.....	.....	QWID	VRLRWNPDY	GGIKKIRLPS
a1_Human	QGDMVDLPRP	SCVTLGVPLF	SHLQNEQWVD	YNLKNWNPDDY	GGVKKIHIPS	
a4_Chick	Q.....	.....	.....	EWHD	YKLKRWDPQY	ENVTSIRIPS

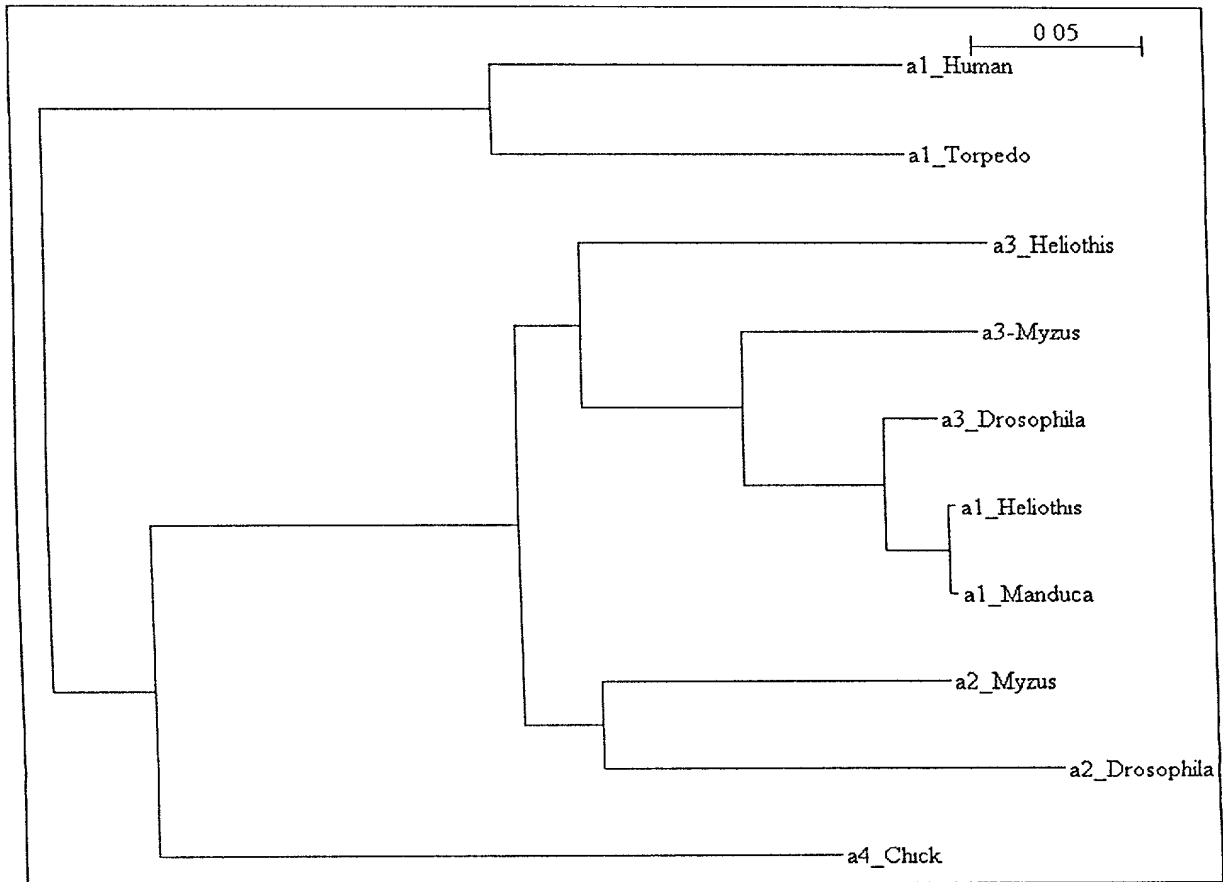
a3_Heliothis	EHIWLPDIVL	YNNWDGNYEV	TLMTKATLKY	TGEVNWKPPA	IYKSSCEINV
a2_Myzus	EHIWLPDIVL	YNNADGNYEV	TIMTKAILHY	TGKVVWKPPA	IYKSFCEINV
a2_Drosophila	EHIWLPDIVL	YNNADGEYVV	TTMTKAILHY	TGKVVWTPPA	IFKSSCEIDV
a1_Manduca	DHIWRPDIVL	YNNADGNFEV	TLATKATLNY	TGRVEWRPPA	IYKSSCEIDV
a1_Heliothis	DHIWRPDIVL	YNNADGNFEV	TLATKATLNY	TGRVEWRPPA	IYKSSCEIDV
a3_Drosophila	DHIWRPDIVL	YNNADGNFEV	TLATKATLNY	TGRVEWRPPA	IYKSSCEIDV
a3_Myzus	EHVWRPDIVL	YNNADGNFEV	TLATKAMLHY	SGRVEWKPPA	IYKSSCEIDV
a1_Torpedo	DDVWLPDLVL	YNNADGDFAI	VHMTKLLLDY	TGKITWTPPA	IFKSYCEIIV
a1_Human	EKIWRPDIVL	YNNADGDFAI	VKFTKVLQY	TGHITWTPPA	IFKSYCEIIV
a4_Chick	ELIWRPDIVL	YNNADGDFAV	THLTKAHLFY	DGRIKWMPPA	IYKSSCSIDV

a3_Heliothis	EYFPFDEQTC	FMKFGSWTYN	GAQVDLKHMD	QSPGSS.LVH	VGIDLSEFYL
a2_Myzus	EYFPFDEQTC	SMKFGSWTYD	GYMMDLRHIS	QAPDS.D.VIE	VGIDLQDYYL
a2_Drosophila	RYFPFDQQTC	FMKFGSWTYD	GDQIDLKHIS	QKNDKDNKVE	IGIDLREYYYP
a1_Manduca	EYFPFDQQTC	VMKFGSWTYD	GFQVDLRHID	EVRGTN.VVE	LGVDLSEFYT
a1_Heliothis	EYFPFDQQTC	VMKFGSWTYD	GFQVDLRHID	EARGTN.VVE	LGVDLSEFYT
a3_Drosophila	EYFPFDEQTC	VMKFGSWTYD	GFQVDLRHID	ELNGTN.VVE	VGVDLSEFYT
a3_Myzus	EEFPFDEQTC	VMKFGSWTYD	GFQVDLRHAN	EVSGSR.VVD	VGVDLSEFYA
a1_Torpedo	THFPFDQQNC	TMKLGIWTYD	GTKVSISPES	DR.....	..PDLSTFME
a1_Human	THFPFDEQNC	SMKLGWTYD	GSVVAINPES	DQ.....	..PDLSTFME
a4_Chick	TFFPFDDQNC	KMKFGSWTYD	KAKIDLVSMH	SH.....	..VDQLDYWE

a3_Heliothis	SVEWDILEVP	ATRNEEYYP	CPEP.FSDIT	FKLTMRRKTL	FYTVNLIIPC	
a2_Myzus	SVEWDIMGVP	AVRHEKFYVC	CEEP.YLDIF	FNITLRRKTL	FYTVNLIIPC	
a2_Drosophila	SVEWDILGVP	AERHEKYYPC	CAEP.YPDIF	FNITLRRKTL	FYTVNLIIPC	
a1_Manduca	SVEWDILEVP	AVRNEKFYTC	CDEP.YLDIT	FNITMRRKTL	FYTVNLIIPC	
a1_Heliothis	SVEWDILEVP	AVRNEKFYTC	CDEP.YLDIT	FNITMRRKTL	FYTVNLIIPC	
a3_Drosophila	SVEWDILEVP	AVRNEKFYTC	CDEP.YLDIT	FNITMRRKTL	FYTVNLIIPC	
a3_Myzus	SVEWDILEVP	AIRNEKYYTC	CEEP.YLDIT	FNITMRRKTL	FYTVNLIIPC	
a1_Torpedo	SGEWMKIDYR	GWKHWVYYTC	CPDTPYLDIT	YHFIMQRIPL	YFVNVVIIPC	
a1_Human	SGEWMKYDSR	GNKHSVYYTC	CPDTPYLDIT	YHFVMQRLPL	YFIVNVIIPC	
a4_Chick	SGEWWINAV	GNWSKYYEC	CTEI.YPDIT	YSFIIRRLPL	FYTINLIIPC	

Figure 1B

Relationship of nicotinic acetylcholine receptor α subunit sequences based on comparison of their ligand binding domains



Tree of amino acid sequences from Fig. 1A produced from alignment of amino acid sequences from Fig. 1A by the program njplotwin95 using standard parameters.

Figure 2

2A) Receptor comprising polypeptide according to SEQ ID NO: 3 and chicken $\alpha 2$

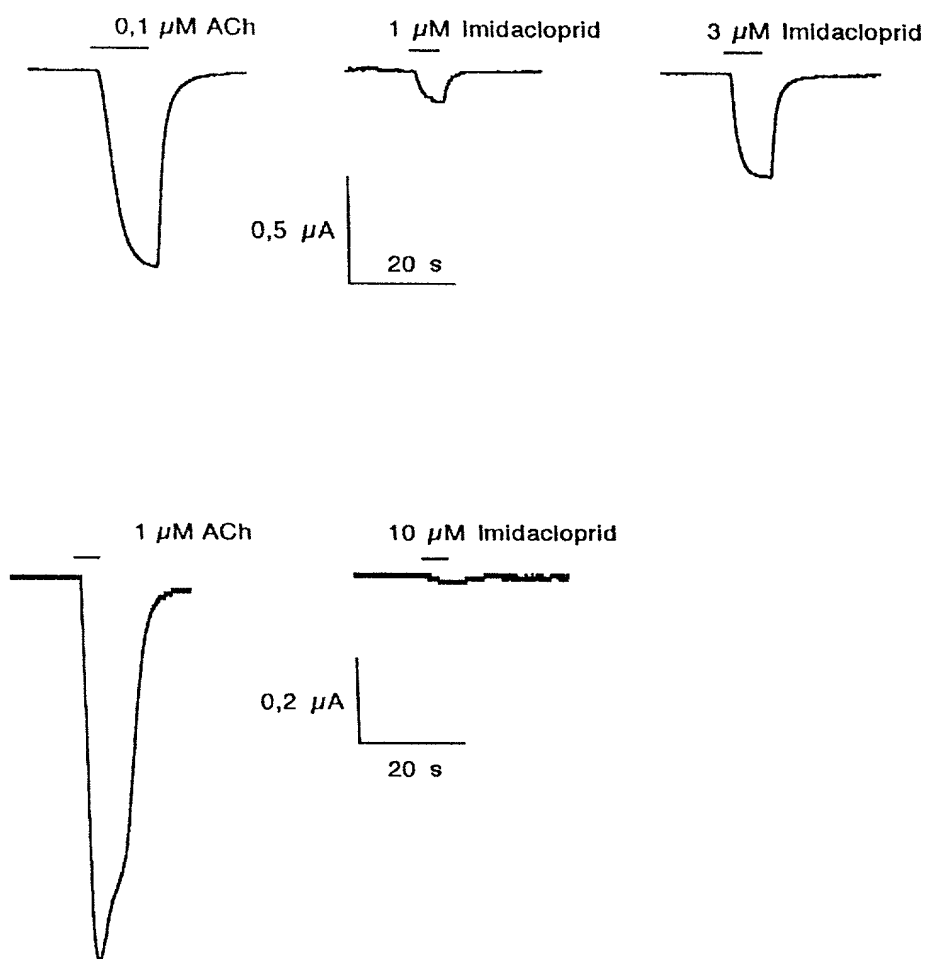
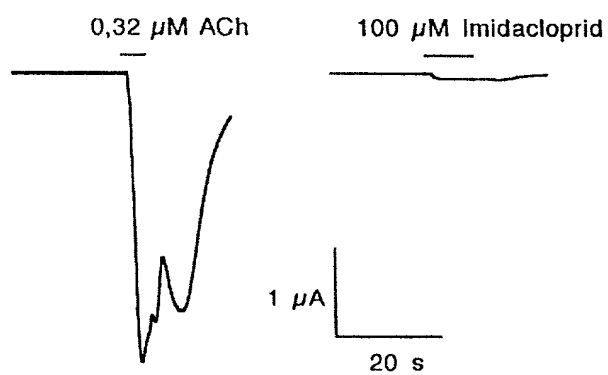


Figure 2 (cont(d))

2B) Receptor comprising chicken $\alpha 4$ and chicken $\alpha 2$



2C) Receptor comprising Heliiothis $\alpha 1$ and chicken $\beta 2$

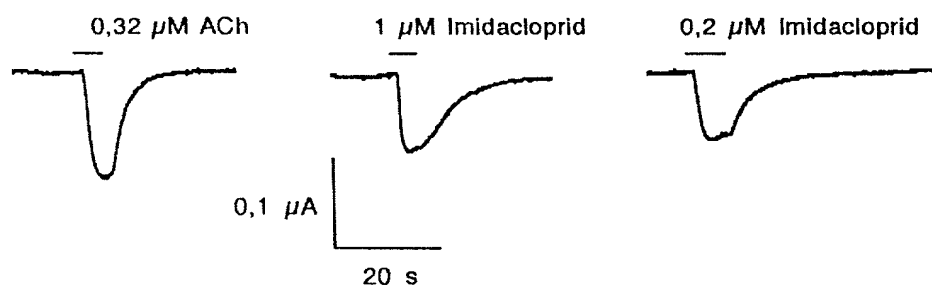
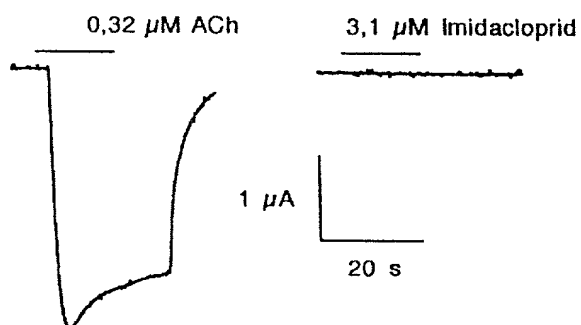


Figure 2 (cont(d))

2D) Receptor comprising polypeptide according to SEQ ID NO: 7 and chicken $\beta 2$



2E) Receptor comprising polypeptide according to SEQ ID NO: 11 and chicken $\beta 2$

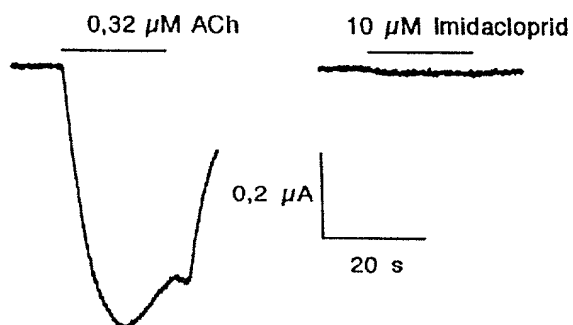
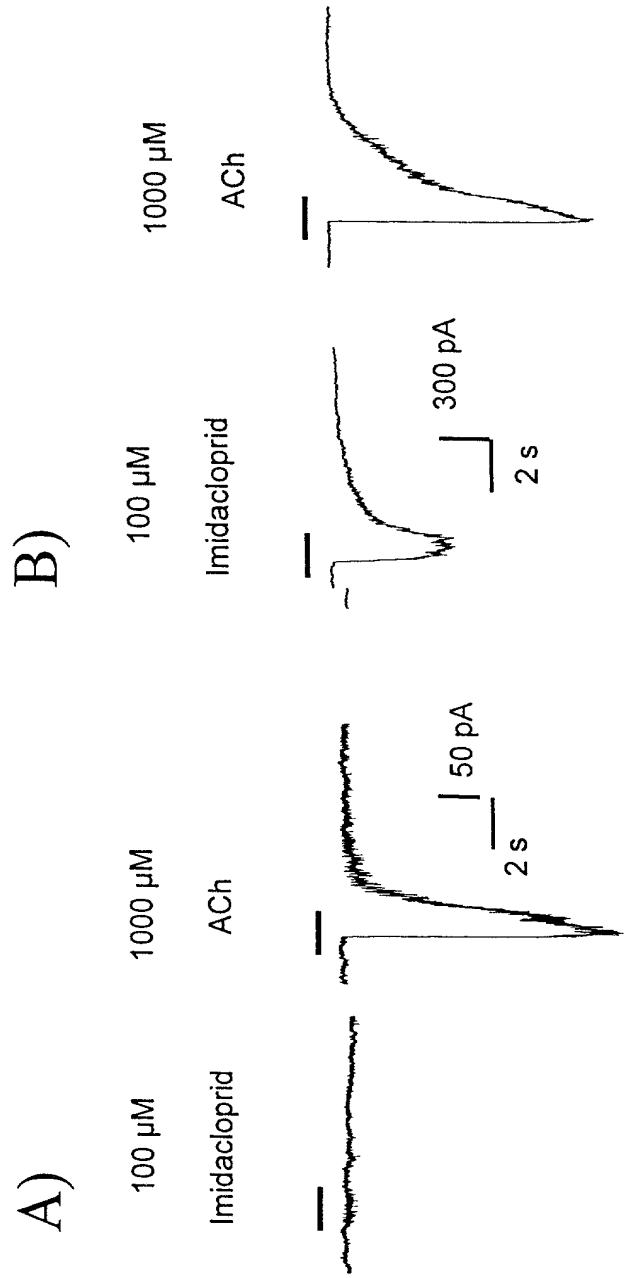


Figure 3



A: Receptor comprising chicken α -4 and chicken α -2 expressed in Sf-9 cells
B: Receptor comprising polypeptide according to SEQ ID NO: 3 and chicken α -2 expressed in Sf-9 cells

Figure 4

